

Project proposal template – Faculty studentships Summer 2014

<i>Project title</i>	Muscular Compensatory Strategies Of Running Gait	<i>Director of Study</i>	Dr Nicola Swann
<i>Second Supervisor</i>	Dr Owen Spendiff	<i>School</i>	Life Sciences <input type="button" value="v"/>
<i>Other members of supervisory team</i>		<i>Any requirements from applicant (eg degree in specific subject area)</i>	Degree in Biology, Sports Science, Physiotherapy, Biomedical <input type="button" value="v"/>
Project summary (max 1,000 characters)			
<p>Optimised gait during running enables appropriate attenuation of ground reaction forces, forward progression of the body at the desired speed and minimum cost of locomotion for the velocity attained. Muscles of the lower limb play an important role in achieving optimum gait patterns through movement of body segments, resistance of applied loads and attenuation of impact forces, through appropriate timing and levels of activation. Inappropriate timing of muscle activation and imbalance of muscular forces have been associated with a multitude of exercise related injuries, including stress fracture, patellofemoral pain syndrome, medial tibial stress syndrome and muscular sprains. The effects of deviations from the optimised gait strategy can range from increased metabolic cost to physiologically catastrophic injury by virtue of the loads applied to the musculoskeletal system. This study aims to assess biomechanical and physiological effects of localised muscle fatigue in running at different speeds and inclines in order to evaluate strategies of musculoskeletal adaptation.</p>			